GFE Job Sheet 1

Getting Started

Objective

This job sheet works you through the process of logging on to the system and starting the GFE.

Logging on to the System

1. User name: awipsusr
2. Password: same as awips

Starting the GFE

1. Click the GFE Icon (dice) at the bottom of the screen. The GFE Startup window will appear, which will allow you to load specific configurations. Make sure that "awipsusr" and "PIHConfig" are selected. If they are not, click on them once to select them. Click start to load the GFE.

2. Occasionally, the GFE may crash, leaving locked grids (red background). To unlock them, click GFE on the Menu Bar, and then click Break Lock...

GFE Job Sheet 2

Choosing a First Guess Model Blend

Objective

This job sheet takes you through the process of reviewing and browsing the GFE initialized sensible weather elements and D2D model grids. Forecasters can browse through derived sensible weather elements from a particular model within the GFE environment and look at selected D2D model grids.

Choosing the best model blend of derived sensible weather before populating your forecast grids will save you valuable time when editing.

Loading IFP Model Derived Weather Elements

1. Select Weather Element from the top Menu Bar, and then select Weather Element Browser. A dialog box will appear.
2. Make sure that IFP is checked under the Types Menu label.
3. Select Source from the Sources menu label, and highlight your model of interest.
4. Select Field from the Fields menu label, and click on the field of interest.
5. Repeat steps 2 and 3 until all the fields you want to review are listed in the Product Selection List.
6. Select the Load or Load and Dismiss button at the bottom of the Browser dialog.

The idea behind reviewing the IFP model derived weather before populating your forecast grids is to determine which model fits your weather scenario the best. The model fields viewed through the AWIPS D2D may not help you enough to determine the best model or combination of models to use. It is recommended that derived fields like maximum and minimum temperatures be viewed through the GFE. However, model diagnostics like the WRH web page can help you determine a model's warm/cold or moist/dry biases. This type of information can help a forecaster determine how to go about adjusting a model derived field up or down.

Loading D2D Model Grids

1. Select Weather Element from the top Menu Bar, and then select Weather Element Browser. A dialog box will appear.
2. Make sure that D2D is checked under the Types Menu label.
3. Select Source from the Sources Menu label, and highlight your model of interest.
4. Select Field from the Fields Menu label, and click on the field of interest.
5. Repeat steps 2 and 3 until all the fields you want to review are listed in the Product Selection List.
6. Select the Load or Load and Dismiss button at the bottom of the Browser dialog.

A handful of D2D model fields are available to be viewed and used to draw edit areas. For example, a forecaster may choose to use the Lifted Index from the Eta model to outline where

thunderstorms or PoPs will be placed. This can be done by using the GFE query utility covered in Job Sheet 4.

Unloading Weather Elements

1. Move the mouse cursor over the weather elements legend in the Spatial Editor. Press the right mouse button and a pop-up menu will appear. Select Unload. This will unload weather elements one at a time.

OR

2. Select Weather Element from the top Menu Bar, and then select Weather Element Browser. A dialog box will appear.
3. Deselect the weather element by clicking on the field listed in the Product Selection List window.

OR

4. Select Weather Element from the top Menu Bar, and then select Weather Element Groups.
5. Select one of the pre-defined weather element groups. This will load the new group and unload the currently loaded fields, unless, of course, there are elements consistent with both groups.

GFE Job Sheet 3

Populating Forecast Weather Elements

Objective

This job sheet will show you how to load forecast weather elements into the Spatial Editor using the GFE browser and the Weather Element Groups. You will also learn how to populate your forecast grids using the different populating methods.

Loading Forecast Weather Elements

1. Select Weather Element from the top Menu Bar, and then select Weather Element Browser. A dialog browser will appear.
2. Make sure that IFP is checked under the Types menu label.
3. Select Source from the Sources Menu label, and select Fcst.
4. Select Field from the Fields Menu label, and click on the field of interest.
5. Repeat steps 2 and 3 until all the fields you want to load are listed in the Product Selection List.
6. Select the Load or Load and Dismiss button at the bottom of the Browser dialog.

Loading Weather Element Groups

1. Select Weather Element from the top Menu Bar.
2. Slide the mouse cursor over the Weather Element Groups menu.
3. Select one of the pre-defined Weather Element Groups from the cascade menu.

Selecting a Weather Element and Time Range

1. Press and drag MB1 (left mouse button) in the Time Scale Pane of the Grid Manager for the time frame of interest. As you drag the mouse, you should see blue hatched shading appear in the Time Scale Pane.
2. Select the weather element by clicking the left mouse button in the small box located in the upper-left corner of the weather element pane of interest.

This is how you identify a time period and weather element that you want to manually populate with a model grid using the Copy Selected Grids From... option C below. You will also use this selection method when editing the gridded field in the Spatial Editor covered in Job Sheet 4.

Populating Weather Elements

Option A: Using a Procedure

1. Select Populate from the Menu Bar.
2. Select one of the pre-defined procedures from the list. This executes the procedure which may take a while to complete.

Option B: Using the Copy All Grids From...

1. Select Populate from the Menu Bar.
2. Select Copy All Grids From... A dialog box will appear.
3. Select one of the model sources from the list.
4. Select OK.

Option C: Using the Copy Selected Grids From...

1. Select a time period and one or more weather elements.
2. Select Populate from the Menu Bar.
3. Select Copy Selected Grids From... A dialog box will appear.
4. Select one of the model sources from the list.
5. Select OK.

Option D: using the Create From Scratch

1. Press and hold the right mouse button over a gap (a place with no grid block) in the selected weather element.
2. Select Create From Scratch from the pop-up menu. A grid will be inserted into the time gap in the Grid Manager.

Option E: Using Time Shift

1. Select a time period and a weather element.
2. Select Grids from the Menu Bar, and click on Time Shift... A dialog box will appear.
3. Select Copy or Move. Selecting Move will delete your original grids.
4. Adjust the slider bar to the time range you want to copy the grid. A positive number reflects a shift into the future, while a negative number reflects a shift backwards.
5. Select OK.

Option F: Using Copy and Paste

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1. Press and hold the right mouse button over the grid block you wish to copy. Select Copy Grid from the pop-up menu.
2. Move the mouse cursor over either a gap or over another grid block. Press and hold the right mouse button over the gap or grid, and select Paste Grid. Note that this procedure works if you want to paste into a current grid of the same or similar weather element (same units).

Assigning a Default Value

1. Select a time period and a weather element.
2. Select Grids from the Menu Bar, then select Assign Default Value.

This method will assign default values to all the grids selected. You can also do one grid at a time by using the right mouse button pop-up menu.

GFE Job Sheet 4

Editing Forecast Weather Elements

Objective

This job sheet will show you how to make a weather element editable and use Edit Areas to modify the grids. You will also learn several ways to edit the grids using Edit Actions such as Assign Value and AdjustValue_up. Lastly, you will learn how to define your own Edit Areas by hand and Query.

Toggle a Weather Grid to Edit Mode

1. Click the middle mouse button on the weather element to toggle it to edit mode.

OR

2. Locate the weather element grid to be edited and click the left mouse button over the grid block in the Grid Manager.

You should see "(edit)" appear to the left of the weather element's legend. A letter will also be displayed in the grid block in the Grid Manager after the grid is modified. The following letters mean:
m - edited by me
o - edited by other
i - initialized
I - interpolated

Load Named Edit Area

1. Select Edit Areas from the Menu Bar.
2. Select the desired Edit Area sub-category by clicking on it.
3. Click on the desired Edit Area on the second menu that popped up. Your Edit Area will display as a hatched region on the weather element grid.

Clear a loaded Edit Area

1. Select the button labeled "C" located to the left of the QuickSet area on the Tool Bar. This will clear any loaded Edit Area from the Spatial Editor.

Adjust a Grid using an Edit Action

1. Once you have defined an Edit Area, you can select one of the Edit Actions from the dialog box. To perform an Edit Action, select the button labeled "E" from the Tool Bar.
2. Once the dialog box appears, select AdjustValue_Up. This will adjust the values of all grid points in your edit area up by the value based on the Delta Value. You can change the Delta value by selecting the Delta button.
3. Assign a value to the entire Edit Area by selecting the wanted value on the Color Bar and

select AssignValue from the dialog box. This should change the value of all the Grid points in the Edit Area to the value you picked from the top color bar. You can also change the default value by clicking on the Pickup button in the Edit Actions dialog box.

4. Try out a few more Edit Actions before moving on. This includes various Smart Tools available in the GFE for your chosen weather element.

Undo the Last Grid Edit

1. Click and hold the right mouse button over the Spatial Editor. Select Undo Grid Edit.

OR

2. Click the Undo button ("U") on the Tool Bar.

The Undo Action will only remove your last edit action. If the grid becomes "messed up" beyond a single undo, load a new grid via the Populate menu and the appropriate model database.

Define and Edit Area by Hand

1. Select the Select Points Tool from the Tool Bar. This is the icon that looks like a Grid.
2. Move the mouse cursor into the Spatial Editor.
3. Press and drag the left mouse button to outline your edit area. You should see a white line that defines the edge of your edit area.
4. Release the left mouse button. The area you outlined should be filled with a white shaded pattern.

Define an Edit Area by Query (by example)

1. Toggle the T (temperature) grid to Edit mode by clicking the middle mouse button on the T Legend.
2. Select the Query button labeled "?" from the Tool Bar.
3. Once the Query dialog box appears, select T from the column labeled Weather Elements.
4. Next, from the operators column, select ">" (greater than).
5. Now, select a temperature value using the number pad (ie. 30). Make sure you have temperatures above the value you entered.
6. Select the Submit button. The area should appear hatched in the Spatial Editor, as long as there are grid point values that match your query. If there aren't any grids that match your query, a message will appear in the Status Bar warning you that the result of your expression is an empty area. You can refine your query.

GFE Job Sheet 5

Manipulating Grid Blocks

Objective

This reference sheet will show you how to manipulate grid blocks in the Grid Manager. Adjusting a grid block's valid time by expanding, fragmenting, and splitting it gives the forecaster control of showing weather changes. This in turn will be reflected in the worded phrase of the text product, such as "afternoon thunderstorms" or "morning thunderstorms". Lastly, you will learn how to delete a grid and interpolate across grid gaps.

Expand a Grid's Valid Time Period

1. In the Grid Manager, press and hold the middle mouse button over a grid block.
2. While holding the middle mouse button down (or both mouse buttons if using a two-button mouse), drag the cursor to the left or right until the grid block stretches across the desired new time period.
3. Release the middle mouse button.

Rather than repeating the same grid over and over, it is useful to define a single grid that is valid over the entire (longer) time period.

Shorten a Grid's Valid Time Period

1. In the Grid Manager, select a time period that covers only the portion of a grid block's valid time that you would like to delete from the main grid.
2. Select Grids from the Menu Bar. Then select Delete Grids.

Split a Grid's Valid Time Period

1. Select a time period that only covers a portion of a grid block that you want to make a separate grid.
2. Select Grids from the Menu Bar. Then select Split Grids.

OR

3. Click MB3 on a grid in the Grid Manager. Then select Split Grids.

Fragment a Grid's Valid Time Period

1. Select a grid block using the left mouse button drag operation so that the grid becomes blue-hatched.
2. Select Grids from the Menu Bar. Then select Fragment Grids.

OR

3. Click MB3 on a grid in the Grid Manager. Then select Fragment Grids.

Fragment differs from the Split operation in that it divides grids into their smallest possible time

blocks.

Delete a Grid Block

1. Select a grid block and time period using the left mouse button drag operation so that the grid or grids become blue-hatched.
2. Select Grids from the Menu Bar. Then select Delete Grids.

Interpolate Grids

1. Select a weather element and time period using the left mouse button drag operation so that the grid blocks become blue-hatched. Make sure the time period covers gaps in the grids.
2. Select Grids from the Menu Bar.
3. Select Interpolate. A dialog box will appear.
4. Make sure that By Gaps is checked.
5. Adjust the sliders (if necessary) for time interval between grids, and duration for each grid. You may not have a duration longer than the time interval. Click OK.

You should see new grids appear and fill the gaps that you identified in step 1. This operation may take awhile, depending on the field chosen and the amount of time you are interpolating across.

GFE Job Sheet 6

Using the Edit Action Pickup Value

Objective

This reference sheet will show you how to use the Edit Action Pickup value option to edit fields like wind and sensible weather.

Edit Action Pickup Value for Wind

1. Select Edit Mode for the Wind element by clicking the middle mouse button on the Wind Legend, or by clicking with the left-mouse button on the appropriate grid in the Grid Manager.
2. Define an Edit Area by hand or some other method.
3. Select the Edit Action Button labeled E from the Tool Bar.
4. Once the Edit Action dialog box appears, click the Pickup button. (You may also use MB3 on the color bar, and then select Set Pickup Value...) A dialog box will appear with a wind vector.
5. Enter the direction and magnitude in the text boxes, and click enter after each one.

OR

6. If Both is checked, click on the wind barb and drag to change the vector. Moving the mouse toward or away from the center point will change the speed, and moving the mouse around the compass circle will change the direction.

OR

7. If Direction Only is checked, click on the wind barb and drag the mouse around the compass circle to change the direction.

OR

8. If Magnitude Only is checked, click on the wind barb and drag the mouse toward or away from the center point to change the speed.
9. Select Assign Value from the Pickup window. The wind field in the edit area will be changed to the values you selected.

Note: If you single click on the color bar with MB1 , you will default to a direction of 360 (N). The speed will be determined by where you click on the color bar.

Edit Action Pickup Value for Weather

1. Select Edit mode for the Weather element by clicking the middle mouse button on the Weather Legend, or by clicking with the left-mouse button on the appropriate grid in the Grid Manager.
2. Define and Edit Area by hand or some other method.
3. Select the Edit Action Button labeled E from the Tool Bar, or click MB3 on the color bar and select Set Pickup Value...
4. Once the Edit Action dialog box appears, click the Pickup button. A dialog box will appear with a series of boxes.

5. Choose weather type from the Type drop down menu. As you define your weather element, your weather element string will appear in a small box in the top left of the Weather Pickup Value dialog box.
6. Choose coverage or probability from the Cov/Prob drop down menu.
7. Choose intensity from the Inten drop down menu.
8. Choose visibility from the Vis drop down menu.
9. If you need to add a weather element (for instance, light rain and snow), click the Add button at the top right of the Weather Pickup Value dialog box. Another column will display, and then you can repeat steps 5 through 8. Your combined weather elements will appear in a string in a small box in the top left of the Weather Pickup Value dialog box.
10. Repeat step 9 to add as many weather elements as needed.
11. Select the Assign Value button to put your new weather element(s) into your Edit Area. If no Edit Area is defined, your weather value will be assigned to the entire grid.

GFE Job Sheet 7

Contour and Pencil Tools

Objective

This reference sheet will show you how to use the Contour and Pencil Tools to modify the weather grids.

Pencil Edit Tool

1. While in the Edit Mode for a forecast element, select the Pencil Tool from the Tool Bar.
2. Press and drag the left mouse button over the gridded field. As you drag with the left mouse button pressed, a white line appears that defines the new position for the gridded contour.
3. Release the left mouse button and the grid values will be modified.

This Pencil Edit Tool can be used to adjust wind shift lines or frontal boundaries easily or to somewhat expand and smooth a field.

Contour Edit Tool - Create a New Contour

1. While in the Edit Mode for a forecast element, select the Contour Tool from the Tool Bar.
2. Pick a value from the color bar by clicking the left mouse button on the color scale at the desired value.
3. Move the mouse cursor over the Spatial editor. Press the left mouse button and drag the cursor to define the new contour. Make sure to close the contour. You may leave the contour open if you start and stop the contour outside the grid domain (black area at no zoom level).
4. When you are done drawing the contour, release the mouse button. The new contour will appear in the Spatial Editor.
5. Repeat steps 2 through 4 to define more contours as needed.
6. Press the right mouse button anywhere in the Spatial Editor. A pop-up menu will appear. Select Calculate New Grid.

Contour Edit Tool - Adjust a Contour

1. While in the Edit Mode for the weather element, select the Contour Tool from the Tool Bar.
2. Move the mouse cursor over the contour of interest.
3. Press and hold the middle mouse button (both mouse buttons if using a two-button mouse) and drag a new position for this contour. Make sure to begin and end your new contour on the same contour value.
4. After you release the button, a new grid will be recalculated.

Contour Edit Tool - Delete a Contour

1. While in the Edit Mode for the weather element, select the Contour Tool from the Tool Bar.
2. Move the mouse cursor over the contour of interest.
3. Click the middle mouse button (both mouse buttons if using a two-button mouse). The contour should disappear.
4. Press the right mouse button anywhere in the Spatial Editor. A pop-up menu will appear. Select Calculate New Grid.

Note: Deleting multiple contours from a weather element grid may produce ugly results.

GFE Job Sheet 8

Wrapping Things Up

Objective

This job sheet will show you how to Save your Grids, Publish the Forecast, and Generate Images.

Saving the Grids

1. Select Edit from the menu Bar. Go to Save Forecast.

OR

2. Click the Save button on the Tool Bar.
3. A dialog box will appear with a list of Weather elements. Make sure all the Weather Elements you want to save are checked in yellow. By default, the GFE will check all the grids that have been changed since the last save operation.
4. Click Save Weather Element(s).

Publish Grids to Official Database

1. Select Products from the Menu Bar. Click Publish to Official.
2. In the right hand column, under Time Period, make sure that All Grids is selected.
3. Click Publish.

Generate PNG Images

1. Select Products from the Menu Bar. Click Generate Products.
2. Click the box next to Generate PNG Images...
3. Click Run/Dismiss to generate the images.
4. Click on the netscape icon on the desktop tray at the bottom of the screen. In bookmarks, click on GFE PNG Images.
5. Keep refreshing the screen to see the list of images you have created. Click any file with the .png extension.

Transfer Grids to AWIPS (a future reference)

1. Make sure your forecast is saved and published.
2. Select Products from the Menu Bar. Click Generate Products.
3. Click the box next to Copy Grids to AWIPS.
4. Click Run/Dismiss to make the transfer.

Note: You may generate multiple products from the Generate Products sub-menu. You may either select multiple products (including the images and the transfer to AWIPS) and click Run or Run/Dismiss, or you may select one at a time, clicking Run after each. Click Cancel to make the dialog box go away when finished.